

Group No.	Group Members	Title
1	<ol style="list-style-type: none"> <li>1. M. Zain Ali (23-ME-80)</li> <li>2. M Yasir Naeem (23-ME-140)</li> <li>3. M Adeel (23-ME-16)</li> <li>4. M Sufyan (23 ME 88)</li> <li>5. Usairum (23-ME-204)</li> </ol>	<p>Investigate the effect of (a) viscosity of oil (being used as lubricant between shaft and sleeve) and (b) shaft's rpm on the power lost in the bearing for the following scenario:</p> <p>For part (a) Shaft diameter: 0.4 m, shaft rotational speed:200 rpm, sleeve length:90 mm, thickness of oil film:1.5 mm</p> <p>It is required to change the viscosity from 5 poise to 20 poise with an interval of 1 poise each time.</p> <p>For part (b) Shaft diameter: 0.4 m, viscosity of oil: 6 poise, sleeve length:90 mm, thickness of oil film:1.5 mm</p> <p>It is required to change the shaft's rpm from 200 rpm to 350 rpm with an interval of 10 rpm each time.</p>
2	<ol style="list-style-type: none"> <li>1. Muhammad Uzair Zia (23-ME-64)</li> <li>2. Hassan Abdullah (23-ME-180)</li> <li>3. Ahmed Ali (23-ME-184)</li> <li>4. Awais Ali (22R/23-ME-200)</li> </ol>	<p>Investigate the capillary effect for different fluids (at least ten different liquids) for the following scenario:</p> <p>A glass tube of 1 cm diameter is immersed into ten different liquids one by one. Use relevant properties of the liquid at 20°C temperatures.</p>
3	<ol style="list-style-type: none"> <li>1. Abdullah (23-ME-96)</li> <li>2. Muhammad Zain (23-ME-52)</li> <li>3. M MUA AZ (23-ME-68)</li> <li>4. HAMAD HASSAN (23-ME-92)</li> <li>5. ABDUL BASIT (23-ME-164)</li> </ol>	<p>Investigate the effect of (a)contact angle, and (b) tube diameter on the capillary rise (or fall) for a vertical glass tube containing water.</p> <p>For part (a) tube diameter: 5mm</p> <p>It is required to change the contact angle from 5° to 15° with successive interval of 1°</p> <p>For part (b) contact angle:5°</p> <p>It is required to change the tube diameter from 5 mm to 15 mm with successive intervals of 1 mm.</p> <p>Use relevant properties of the liquid at 20°C temperatures.</p>
4	<ol style="list-style-type: none"> <li>1. Zeeshan Haider (23-ME-08)</li> <li>2. Mubeen Hassan</li> </ol>	<p>Investigate the effect of slope of taper pipe on the fluid pressure (at lower end of pipe) for a frictionless (ideal, non-viscous) flow for the</p>

	<p>Shah (23-ME-28)</p> <p>3. Muhammad Moaz Arshad (23-ME-44)</p> <p>4. Daniyal Niazi (23-ME-56)</p> <p>5. Zain ul Haq Awan (23-ME-116)</p>	<p>following scenario:</p> <p>Assume that the water is flowing through a taper pipe of length 200 m having diameters 800 mm and 300 mm at the upper and lower end respectively, at the rate of 50 liters/s. Find the pressure at the lower end if the pressure at the higher level is 196.2 k Pa.</p> <p>It is required to change the slope of pipe from 1 in 10 to 1 in 55 (with successive interval of 1 in 5 each time).</p>
5	<p>1. Ahmad Iftikhar (23-ME-108)</p> <p>2. M. Haseeb Raja (23-ME-48)</p> <p>3. Luqman Tariq Khan (23-ME-156)</p> <p>4. M.Huzaifa Hashim Qureshi (23-ME-132)</p> <p>5. M. Adeel Ali Awan (23-ME-104)</p>	<p>Investigate the effect of angle of inclination of a submerged rectangular plate on (a) total pressure force, and (b) center of pressure for the following scenario:</p> <p>Suppose the rectangular plate is 4 m wide, 5 m deep. The plate is submerged in an oil (with specific gravity of 0.9) in such a way that the upper edge of the plate is 2.5 m below the free surface of the oil.</p> <p>It is required to change the angle of inclination from 30° to 60° with an interval of 2° each time.</p>
6	<p>1. M.Abubakar (23-ME-160)</p> <p>2. M.Talha Feroze (23-ME-40)</p> <p>3. Muhammad Hussain (23-ME-208)</p> <p>4. Rayyan Zahid (23-ME-76)</p> <p>5. Muhammad Ibraheem (23-ME-192)</p>	<p>Investigate weight loss phenomenon for different fluids (at least ten different liquids) for the following scenario:</p> <p>A concrete block (density of concrete block: 2300 kg/m<sup>3</sup>, dimensions of block: 0.4 m*0.4 m*3 m rectangular block) is immersed into ten different liquids one by one. Use relevant properties of the liquid at 20°C temperatures.</p>
7	<p>1. Saad Abdullah Naveed (23-ME-176)</p> <p>2. Umer Jallal Shah (23-ME-60)</p> <p>3. Shah Sadaruddin Qaism (23-ME-196)</p>	<p>Investigate the effect of variation in diameter of pipe (from one section to the other) on the mass flow rate for the given scenario:</p> <p>The diameter of the pipe is 50 cm at section A, and it carries oil of sp. gr. 0.9 at a velocity of 1.5 m/s. The diameter is reduced at section B. Find</p>

	<ol style="list-style-type: none"> <li>4. Hassaan Quershi (23-ME-84)</li> <li>5. Affan Raza (23-ME-212)</li> </ol>	<p>the mass rate of flow of oil at the section B.</p> <p>It is required to change the diameter from 50 cm to 5 cm at section B with successive interval of 5 cm each time.</p>
8	<ol style="list-style-type: none"> <li>1. Syed Zamin Ali (23-ME-172)</li> <li>2. Awais Iqbal (23-ME-144)</li> <li>3. Awais Niazi (23-ME-124)</li> <li>4. Ukasha Ahmad (23-ME-120)</li> <li>5. Hussain Ali (23-ME-168)</li> </ol>	<p>Investigate the effect of temperature of fluid on the required pumping power to overcome frictional losses for water flowing through a circular horizontal pipe for the following scenario (turbulent flow).</p> <p>Suppose the water is initially flowing at 50°C through a horizontal pipe of 5.1 cm diameter and 60 m length at a flow rate of 5660 cm<sup>3</sup>/s. The temperature is then dropped to 0°C with corresponding change in density as well as viscosity (assume that flow rate remains constant throughout).</p> <p>It is required to compute the pumping power for each 5°C temperature drop.</p>